

# Museum Lighting Resources

iTunes Preview

## Museum Lighting

by Smithsonian American Art Museum

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American Art

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### Description

Videos include demonstrations of lighting techniques for sensitive materials; several of the videos show the effects of different lighting on artworks at the Smithsonian American Art Museum.

	Name
1	Lighting Techniques in the Museum
2	Museum Lighting 101
3	LED Lighting in Today's Museum

iTunes University  
“Museum Lighting”



SMITHSONIAN AMERICAN ART MUSEUM

Scott Rosenfeld  
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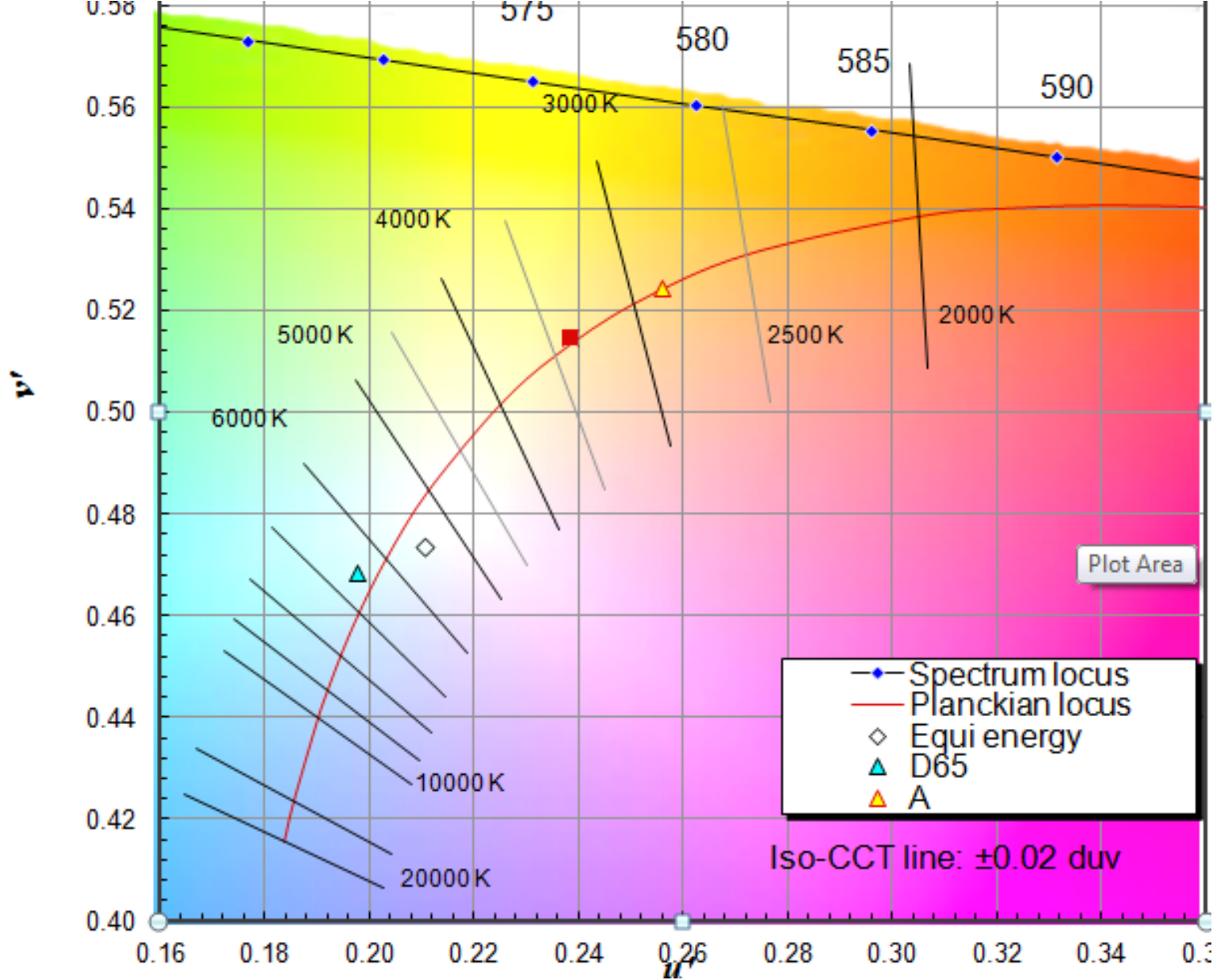
# Properties of light that effect how we see **COLORED** objects

**1. Illuminance**

**2. Color Rendering**

**3. Chromaticity**

# COLOR TEMPERATURE



**ANSI C78.377-2008 Tolerances**

**$\pm .0006 Du'v'$**

**$\pm 145K$  at 2700 Kelvin**

# Spectrometers and Eyes

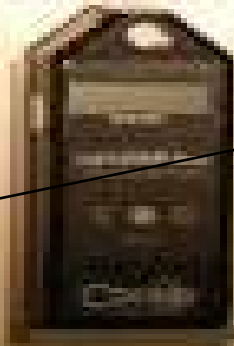




**COLOR RENDERING**



**CHROMATICITY**

















EARLY MODERNISM GALLERY. 16'4" CEILING

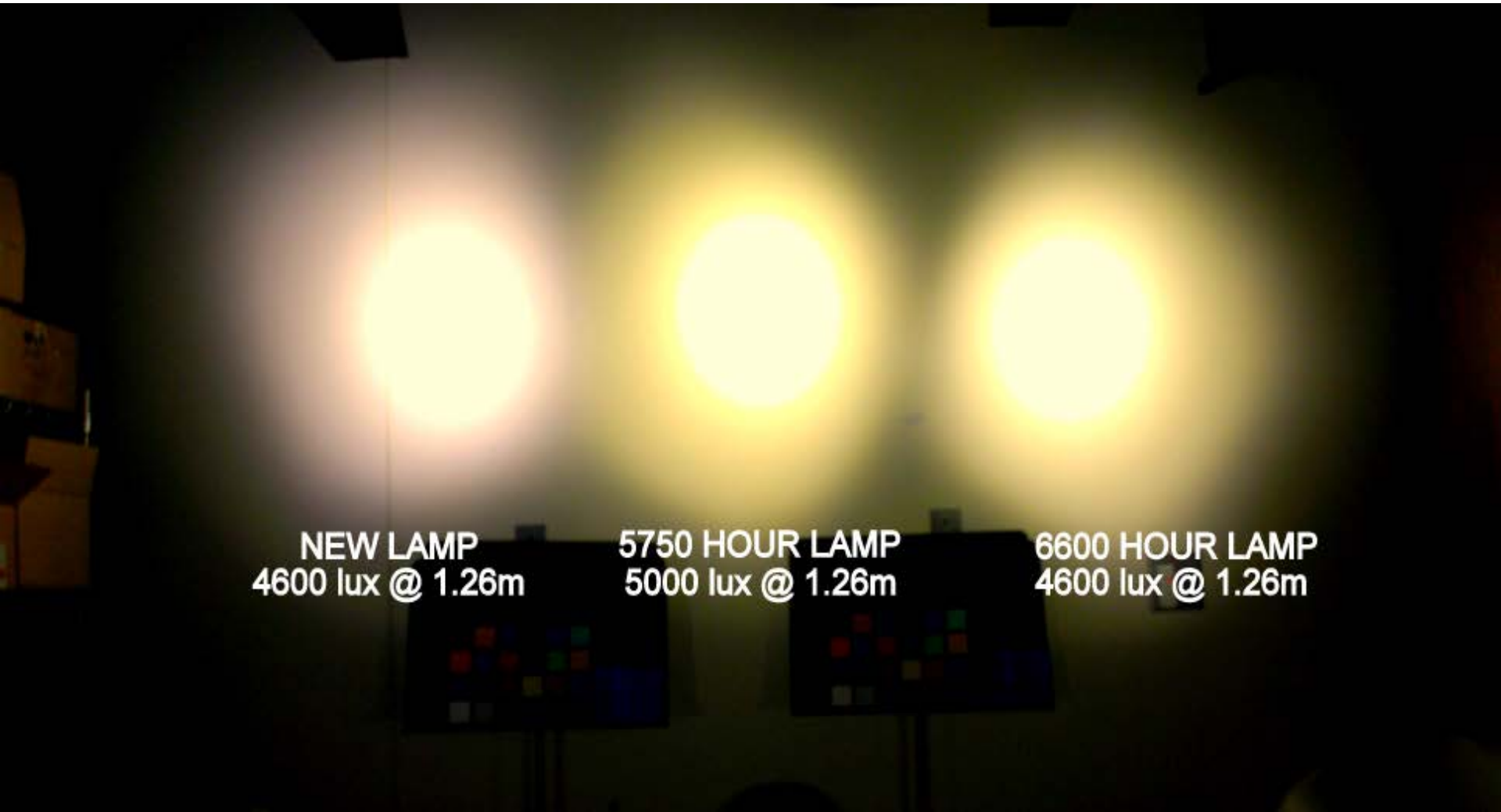








# PAR30/ 3000K LAMP WAS EQUIPPED WITH INTEGRAL THERMISTOR



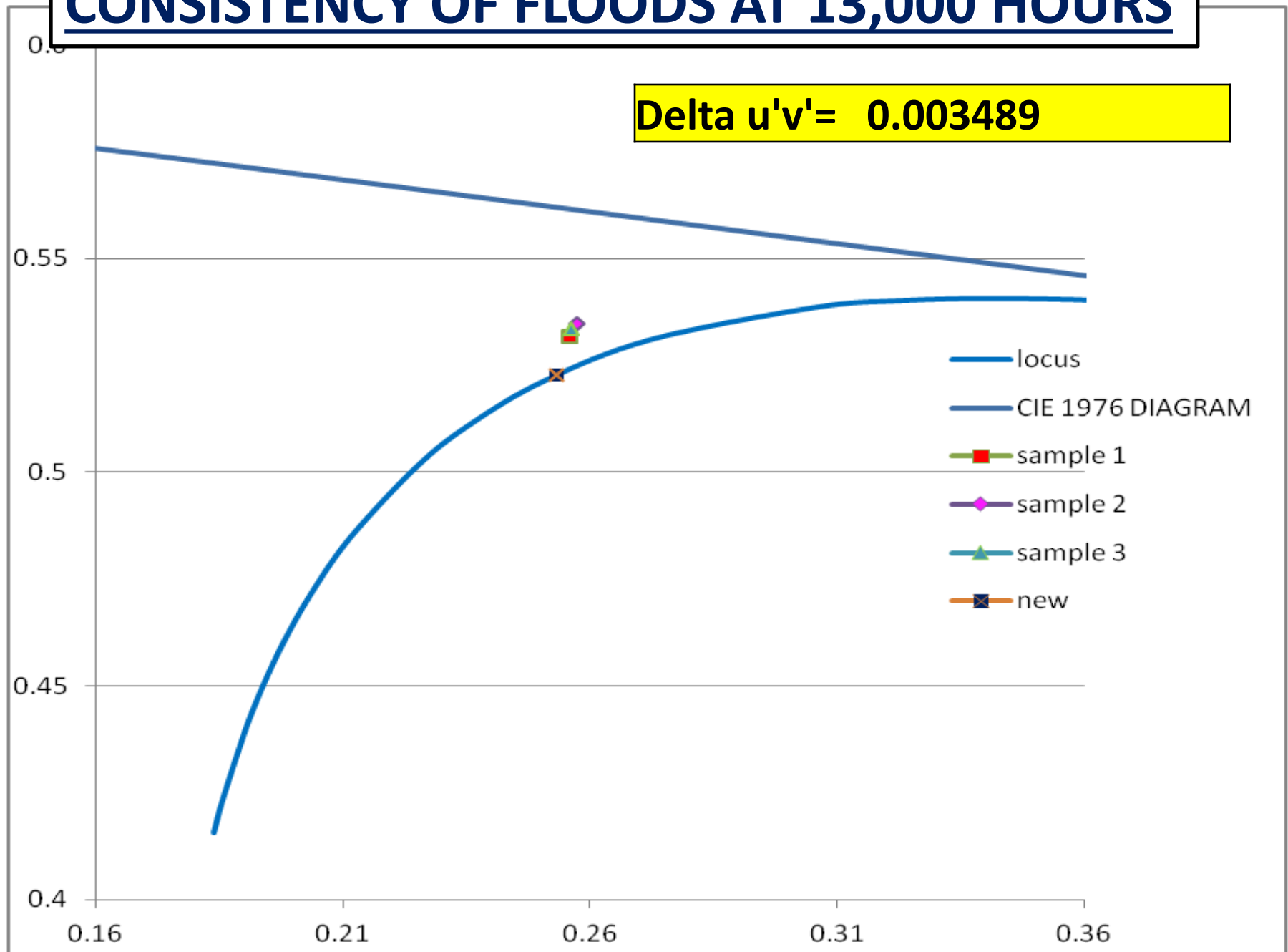
NEW LAMP  
4600 lux @ 1.26m

5750 HOUR LAMP  
5000 lux @ 1.26m

6600 HOUR LAMP  
4600 lux @ 1.26m

# CONSISTENCY OF FLOODS AT 13,000 HOURS

Delta  $u'v'$  = 0.003489



**.0037  $\Delta u'v$  @ 6600 hrs**  
**(Floods)**



**.008  $\Delta u'v$  @ 6600 hrs**  
**(Spots)**



**.016  $\Delta u'v$  @ 6600 hrs**



Color Maintenance Nightmare: PAR30/SP, PAR30/FL, MR16 (RIGHT TO LEFT)

*Photo from file, not from gallery with color changes.*

**.01  $\Delta u'v$  @ 13,000 hours**



**.01  $\Delta u'v$  @ 13,000 hrs**

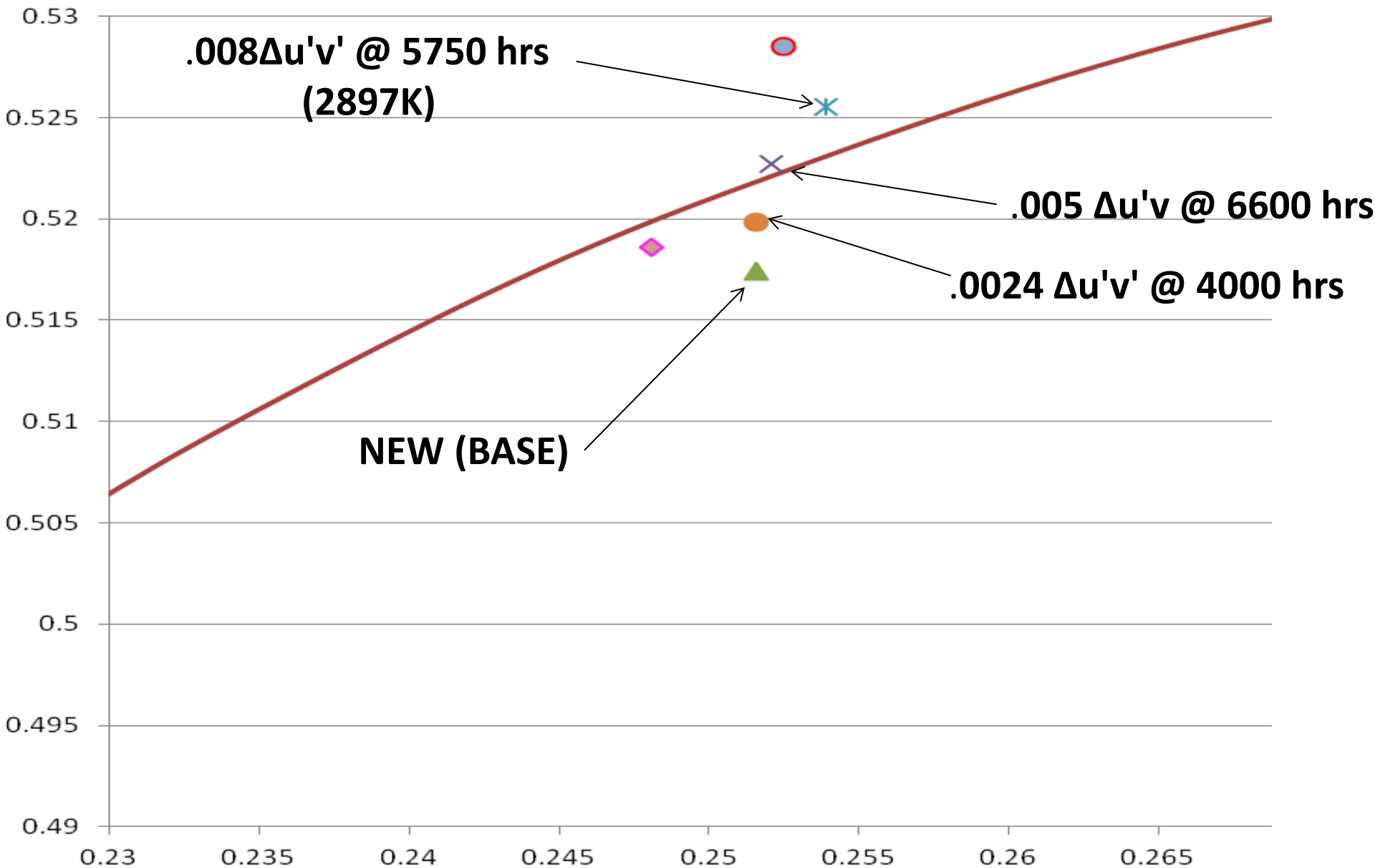
**.005  $\Delta u'v$  @ 13,000 hrs**



Color Maintenance Nightmare: PAR30/SP, PAR30/FL, MR16 (RIGHT TO LEFT)

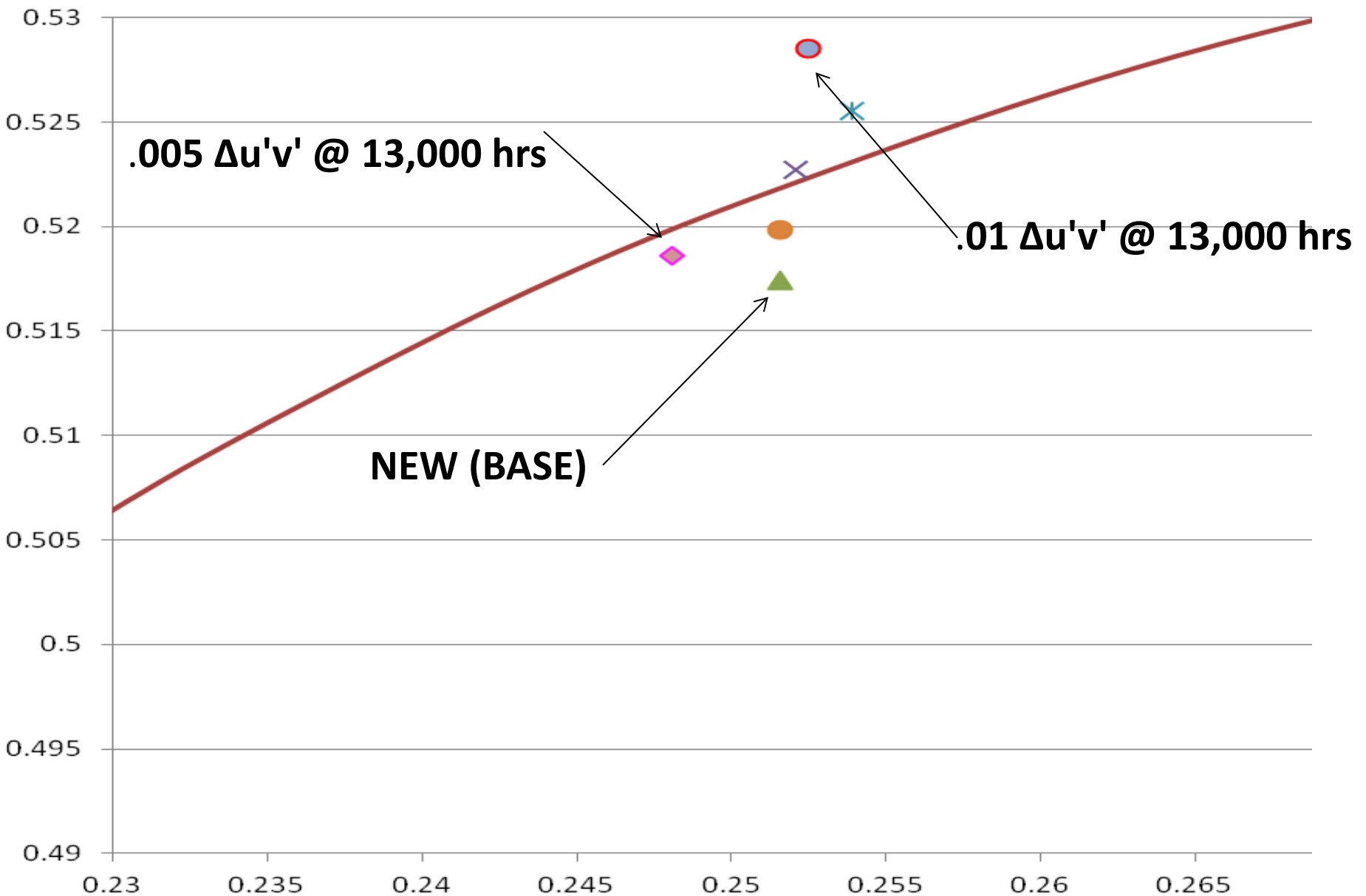
*Photo from file, not from gallery with color changes.*

# Color Stability of PAR30 Spots – over time

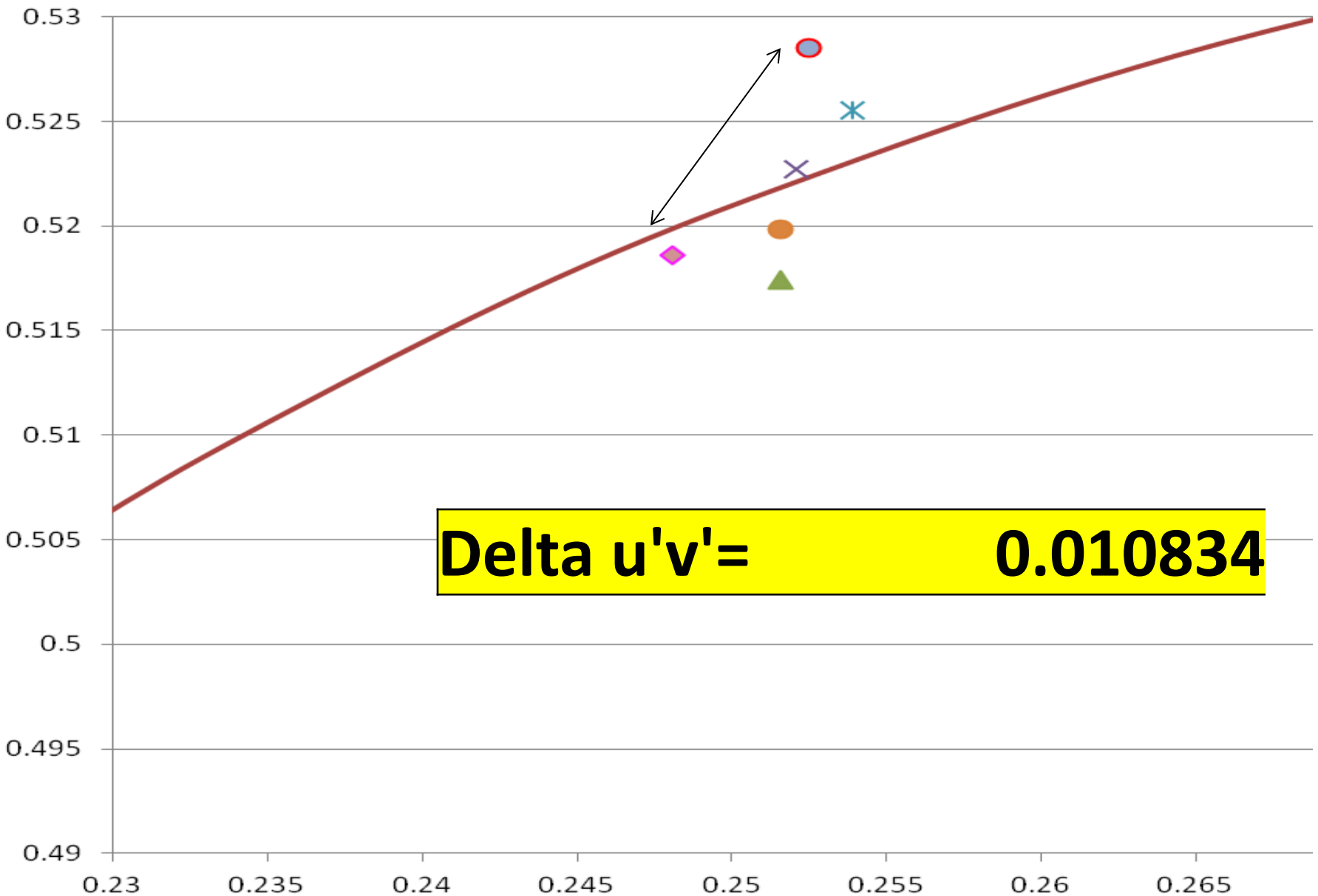




# Color Stability of PAR30 Spots – over time



# Color Consistency of PAR30 Spots – OVER TIME



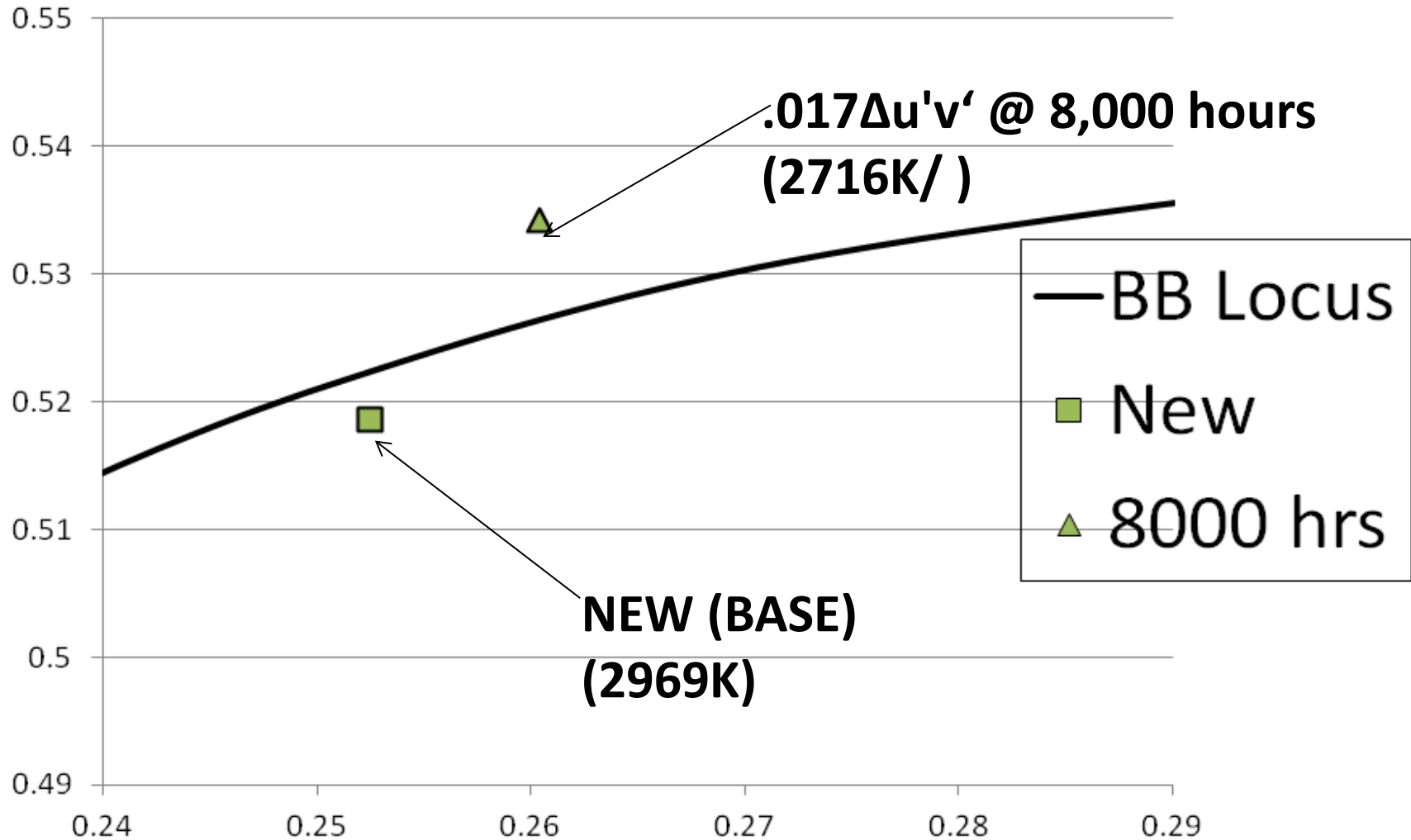


# HIRSHHORN MUSEUM AND SCULPTURE GARDEN



photo by: [sonofgroucho.com](http://sonofgroucho.com)

# PAR38/3000K /15 degree

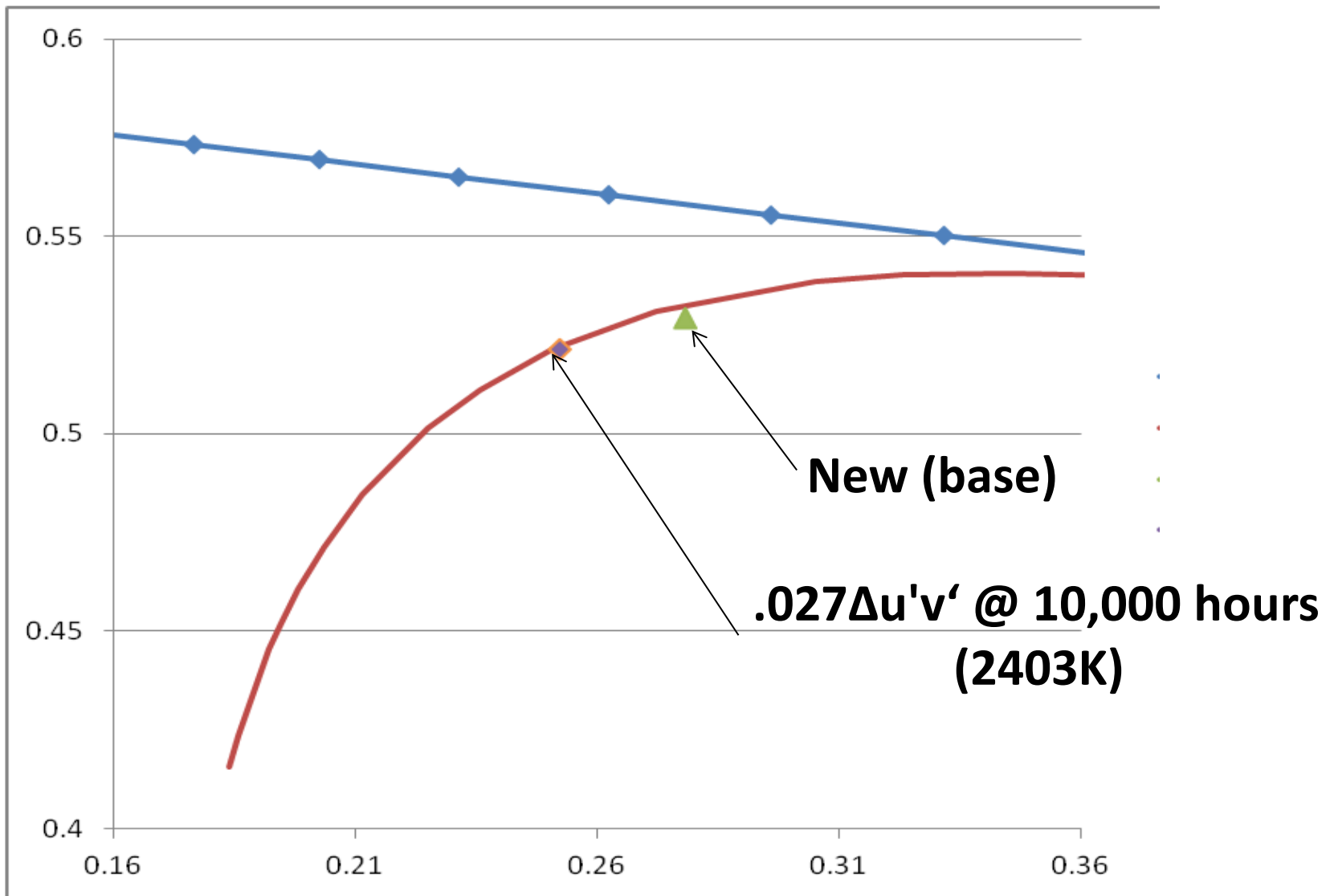




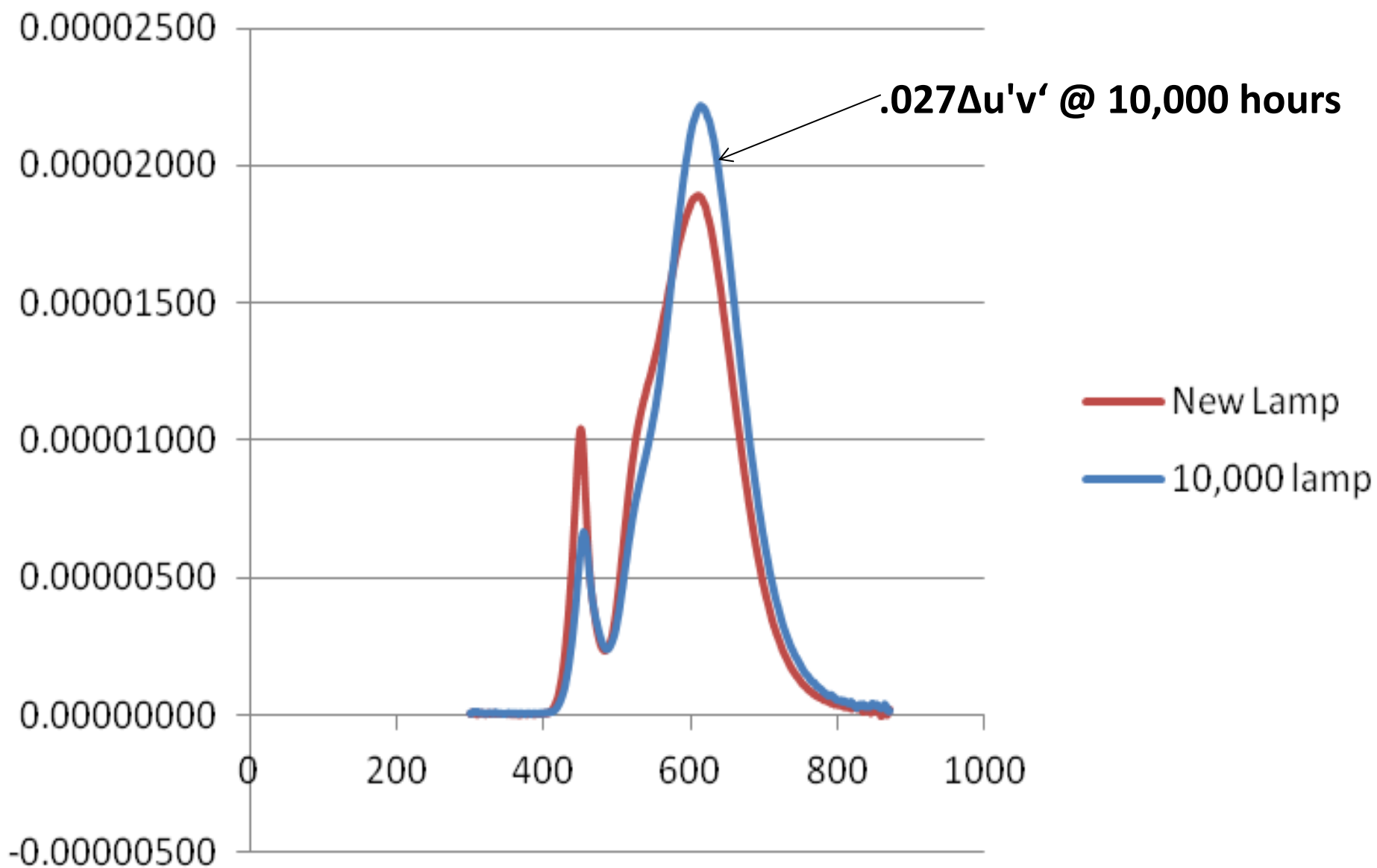
# FREER GALLERY OF ASIAN AND AMERICAN ART



# PAR38 LAMP/ 35 DEGREE/ 20.3 WATTS



# PAR38 LAMP/ 35 DEGREE/ 20.3 WATTS



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